Amendments to the Specification

Please replace paragraph **[20]** with the following rewritten paragraph:

a1

[20] In *Diffraction Gratings and Applications*, Erwin G. Loewen and Evgeny (Marcel Dekker, New York, 1997) ("Loewen"), a standard reference work that discusses diffraction-grating design, it is taught that deep gratings are undesirable because of problems in controlling the profiles and the fact that replicator processes are difficult to adapt to such gratings (Loewen, p. 132). Beyond such cautionary teachings ~~away from deep gratings because of the manufacturing difficulties~~, Loewen further teaches that while high efficiency can be achieved for transmissive gratings under Bragg conditions, reflection grating are instead preferably manufactured with only moderate depths (*id.*, p. 132). Loewen specifically teaches that to have high efficiency with a reflective grating, the depth should be approximately $h / a \leq 0.35$ (*id.*, p. 134). Even under such conditions, Loewen further teaches that the response in S and P polarization states (referred to therein respectively as TM and TE polarization states in Loewen) is asymmetrical (*id.*, p. 134).

Please replace paragraph **[23]** with the following rewritten paragraph:

a2

[23] For such a reflective grating 204, high efficiency is generally achieved when used in first order near the Littrow condition, in which incident and diffracted rays are autocollimated so that $\alpha = \beta \equiv \varphi$. Under these circumstances, the diffraction equation takes the simple form

$$\sin\varphi = \frac{\lambda}{2a}.$$

In one embodiment in which the system is configured for near-Littrow behavior, the grating 204 is oriented for high dispersion so that the multiplexed signal is incident at an

a2.1 cont'd

angle of approximately $\alpha = 45°$ with respect to the normal 208. In such an embodiment, the line density $1/a$ of the grating is given by

$$\frac{1}{a} = \frac{\sqrt{2}}{\lambda},$$

so that at $\lambda \approx 1550$ nm, the line density of the grating 204 is of the order of 900 lines/mm. Generally, with operational wavelengths in the C-band range of 1530 – 1565 nm, a line density between about 700 and 1100 lines/mm is thus desirable. Current efforts may extend the operational wavelength range for optical telecommunications by about 30 nm ~~on either end of the 1530 – 1565 nm range.~~

Please replace paragraph **[33]** with the following rewritten paragraph:

A3

[33] A reflective lamellar diffraction grating made according to embodiments of the invention, as described above, may be used in a wide variety of optical assemblies. An example of one such assembly is a wavelength router, such as the one described in detail in the copending, commonly assigned United States Patent Application, filed November 16, 1999 and assigned Serial No. 09/442,061, now U.S. Pat. No. 6,501,877, entitled "Wavelength Router," which is herein incorporated by reference in its entirety, including the Appendix, for all purposes. The following describes the structure of some embodiments of such a wavelength router, although the invention may be readily used with other wavelength-router embodiments also.